

**c. Amendments to the Drawings**

**Please amend Figures 3 and 5 to be as shown on attached Replacement Sheets.**

**e. Remarks**

Election

Applicants elect for prosecution the claims of Group I, i.e., claims 1 – 9.

Amendments

At page 2, after line 4, the insertion is supported, e.g., by original claim 7.

Figure 3 has been amended to add reference numeral --12A-- as shown in the original drawings.

Figure 5 has been amended to add reference numeral --12B-- as shown in the original drawings.

Amended claim 9 is supported, e.g., by Figure 3 and at page 8, lines 12 – 25, of the original specification.

Objections to Claims

**At page 3, the Office Action objects to claim 7 due to the recitation of “substantially proportional” therein.**

At page 2, after line 4, the specification has been amended to recite language that supports claim 7 as filed. In light of the teachings of the specification, the language of claim 7 would be clear to one of skill in the art.

The Office Action provides an interpretation of the meaning of “substantially proportional” as recited in pending claim 7. The interpretation of the Office Action is unclear/misleading to Applicants. Applicants intend that the phrase “substantially proportional to an intensity” be given the full scope that one of skill in the art would give to the phrase.

**At page 3, the Office Action objects to claim 8 due to the recitation of “of an intensity of one of linear polarization of light” therein.**

Claim 8 has been amended to improve its clarity. For that reason, Applicants request withdrawal of the clarity objection to claim 8.

**At page 3, the Office Action objects to claim 9 due to the recitation of “substantially non-parallel” therein.**

Claim 9 has been amended to improve its clarity. For that reason, Applicants request withdrawal of the clarity objections to claim 9.

Applicants note that amended claim 9 is broader in scope than the interpretation given to claim 9 by the Office Action at page 3, paragraph 4.

#### Claim Rejections

**At page 4, the Office Action rejects claims 1-6 and 8-9 as being obvious over a combination of US Patent No. 5,663,793 of de Groot (Herein, referred to as de Groot.) and US Patent Publication 2004/0095865 of Katayama (Herein, referred to as Katayama.).**

#### Claim 1

At page 4, lines 11 – 13, the Office Action admits that de Groot does not teach using two partial polarization splitters as recited in pending claim 1. The Office Action then, combines the teachings of Katayama with de Groot to find the missing second partial polarization splitter. With respect to this modification of de Groot or combination of de Groot and Katayama, the Office Action states:

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the two PPS of Katayama in place of the single PPS of de Groot for the purpose of further extracting a desired polarization component for detection. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to separate polarizations along different directions, as done for the 1<sup>st</sup> and 2<sup>nd</sup> splitters of Katayama for the purpose of ensuring that the polarizations do not further mix along their paths.

Office Action, page 4, lines 15 – 21 (underlining added).

In response, Applicants note that a proper showing of prima facie obviousness requires a prior art motivation that suggests combining or modifying the cited reference(s) in a manner to arrive at the claimed inventions. That is, cited prior art must teach or suggest the purported motivation for combining and/or modifying the cited reference(s). See M.P.E.P. §§ 2143, 2143.01. The Office Action does not cite any prior art as teaching the stated motivations for modifying de Groot or for combining de Groot and Katayama. In particular, the Office Action does not cite prior art to support either of the stated desires of “further extracting a desired polarization component for detection” or of “ensuring that the polarizations do not further mix along their paths”. Rather than citing specific prior

art that teaches such motivations, the Office Action appears to have constructed the purported motivation to combine and/or modify the cited reference(s) based on a knowledge of the present invention. That is, the Office Action appears to have used hindsight to find the purported motivation to modify and/or combine the cited reference(s). Since such a use of hindsight is impermissible, the obviousness rejection of pending claim 1 is improper and should be withdrawn.

In addition, Applicant adds that the purported motivations to combine and/or modify the cited reference(s), i.e., as described in the Office Action, are illusory. For example, the Office Action gives the following reason/motivation for modifying de Groot to incorporate the teachings of Katayama therein.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the two PPS of Katayama in place of the single PPS of de Groot for the purpose of further extracting a desired polarization component for detection.

Office Action, page 4, lines 15 – 18 (underlining added).

Thus, the Office Action states that there was a need for modifying de Groot's device to "extract a polarization component for detection". In contrast to this purported need, de Groot's device was already able to extract/detect such polarization components. In particular, de Groot states that the polarization state of the "beam 103 may be described by orthogonal polarization components p and s, ..." de Groot, col. 4, lines 4 – 8. Also, de Groot states that his device is able to measure the intensities of each of the s and p polarization components, i.e.,  $I_s$  and  $I_p$ , and can also measure the phase difference, i.e.,  $\theta$ , between the s and p polarization components. See de Groot, col. 4, line 60, to col. 5, line 2; col. 5, line 52, to col. 6, line 24. For these reasons, de Groot's device can already detect the two polarization components of the input light from the beam 103. Thus, there would have been no reason to modify de Groot's apparatus as above-suggested in the Office Action.

Finally, Applicant mentions that neither cited Figure 1 of de Groot nor cited Figure 4 of Katayama show a device in which three polarization splitters are serially coupled as recited in pending claim 1. The Office Action does not provide an adequate prior art motivation to modify the devices of Fig. 1 of de Groot and Fig. 4 of Katayama, which have only two serially coupled polarization splitters, to produce a new device in which three polarization splitters are serially coupled.

Claims 2 – 6 and 8 – 9

Dependent claims 2 – 6 and 8 – 9 are non-obvious over the combination as applied in the Office Action, at least, by their dependence on non-obvious base claim 1.

**At page 6, the Office Action rejects claim 7 as being obvious over of de Groot, Katayama, and US Patent 5,337,146 of Azzam (Herein, referred to as Azzam.).**

Claim 7 is non-obvious over the combination as applied in the Office Action, at least, by its dependence on non-obvious base claim 1.

Conclusion

For the above reasons, Applicants request allowance of claims 1 – 9 as presented herein.

In the event of any non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Lucent Technologies Deposit Account No. 12-2325** to correct the error.

Respectfully,

A handwritten signature in cursive script, appearing to read "John McCabe", written over a horizontal line.

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Date: August 16, 2006  
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